

REMARKS/ARGUMENTS

Claims 6-9 are pending in the application. Claims 6 and 8 have been amended to indicate that the ceramic sleeve and the moveable ceramic piston are solid ceramic. The amendment is supported, for example, at page 5, lines 7-9 and FIG. 1 of the specification. Applicants appreciate the Examiners professional courtesy in the telephone interview conducted November 10, 2004.

Rejections under 35 U.S.C. § 103(a)

Claims 6-9 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,723,518 to Kahl et al. (hereinafter "Kahl"), in view of GB 997,974 in combination with U.S. Patent Nos. 4,784,178 to Kasaya et al. (hereinafter "Kasaya") and 3,706,320 to Kalsi (hereinafter "Kalsi"). The Examiner suggests that dispersers having the claimed pipe, sleeve and piston arrangement were known at the time of the invention and that it would have been obvious to produce the dispersers disclosed in Kahl using the disperser disclosed in GB 997,974 because it would have been obvious to modify the disperser to be electrically or pneumatically controlled to promote automation and precise control and to utilize ceramic materials so as to extend the service life and promote ease of cleaning. Applicants respectfully request reconsideration.

The present invention is directed to a process for producing an aqueous two-component polyurethane coating emulsion that includes pumping a mixture of at least one polyisocyanate and an aqueous binder dispersion under a pressure of 1 to 30 MPa into a disperser. The disperser includes a solid ceramic sleeve having bores or slots in the wall thereof, with the bores or slots communicating with one end of a pipe, the pipe having an open end remote from said end communicating with the bores or slot. The ceramic sleeve has an open end, a moveable solid ceramic piston located opposite the open end, with the movement of the moveable ceramic piston being such that flow through the bores or slots can be enabled or completely closed, and with the movement being caused either via a pneumatic drive or an electric step motor. The mixture is pumped into the open end of the ceramic sleeve, through the bores or slots, and through the pipe.

Kahl discloses a method of preparing an aqueous coating composition based on resin binders containing isocyanate-reactive hydrogen atoms and polyisocyanates, by mixing the components with water. The mixture is forced at a pressure of from 1 to 30 MPa through a nozzle of small size in at least one dimension.

GB 997,974 discloses a device for dispersing a contaminant in a liquid flow to produce a uniform dispersion. The device includes a conduit discharging through apertures into another conduit; a chamber resiliently biased against the liquid flow uncovers a greater number of apertures as the rate of flow increases in order to provide a constant pressure-drop across the device.

Kasaya discloses a valve unit having an ON-OFF switch constituted by a valve, the associated valve seat and an insulation layer. The layer is made of a compound consisting of a specific metal and a specific reaction gas and the layer is coated on the outer surface of the valve in such a way that its electrical resistance increases progressively from the inner surface closest to the valve to the outer surface destined to make contact with a guide member of the valve.

Kalsi discloses a valve having a pneumatic operator and a linear port opening rate with a mechanism for compensating variations in the pressure drop across the valve, in order to make the flow a linear function of a control signal. A pressure sensitive device produces a rotation of a square root cam proportional to the pressure drop across the valve. The displacement produced by the cam is multiplied by the control signal and the product is added to a displacement proportional to the control signal. The resulting quantity is compared with the position of the valve stem, and the difference is used to adjust a pilot valve which controls the operator and resets it so as to compensate the variation in the pressure drop across the valve.

The object of the present invention was to provide a mixing apparatus for aqueous two-component polyurethane lacquers having a high lacquer quality that , continuously produces the same emulsion qualities when the amounts deposited vary (see page 4, lines 15-19 of the specification). A particular problem results when certain components are made of steel, which does not permit a tight seal to be achieved reliably (see page 5, lines 6-25 of the specification).

In order to overcome this latter problem, Applicants discovered that solid ceramic components ground to fit very accurately avoided the leakage problem between the piston and the sleeve, which was a problem when they were made of steel, do not permit a tight seal and thus allow individual bores to be connected through.

In the Office Action dated November 4, 2004, the Examiner stated that "the instant claim language does not require that the parts be solid ceramic." The Examiner then stated his position that "the claim language merely requires the argued parts to have a ceramic feature or characteristic; therefore, the position is further taken that the ceramic coated components of the prior art satisfy the claim requirements."

Although Applicants strenuously disagree with the Examiner's claim construction, in the interest of furthering prosecution of the present application, Applicants have amended Claims 6 and 8 to indicate that the ceramic sleeve and the moveable ceramic piston are solid ceramic.

However, in the telephone interview with the Examiner on November 10, 2004, the Examiner indicated that such an amendment could result in a new matter rejection. Applicants respectfully assert that the amendment does not constitute new matter.

According to MPEP § 2163.02, an objective standard for determining compliance with the written description requirement is, "does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed." In re Gosteli, 872 F.2d 1008, 1012 (Fed. Cir. 1989). Under Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991), to satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed.

"[U]nder proper circumstances, drawings alone may provide a 'written description' of an invention as required by § 112." Vas-Cath, 935 F.2d at 1565.

The present specification clearly states, referring to Figure 1 that the "core element of the apparatus according to the invention is a ceramics sleeve (3) having the homogenising bores (4) and the ceramics piston (5)." Further, Figure 1 clearly indicates ceramics sleeve (3) and piston (5) in solid white structures, not indicating or at all suggesting anything but a solid component, as is now claimed.

Indeed in Paragraph 6 of the Office Action dated November 4, 2004, the Examiner does not dispute Applicants' claim construction, but theorizes that the claim language could be twisted and construed to encompass ceramic coated steel parts.

An Applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

As Applicants have described the claimed invention with all of its limitations using the descriptive words and figures in the specification, the requirements of 35 U.S.C. § 112 are satisfied and the present amendment to the claims does not warrant a new matter rejection.

The Examiner has cited *Kasaya* for the proposition that ceramic materials should be used to provide abrasion resistance. However, *Kasaya* does not disclose or in any way suggest ceramic components as used and described in the present invention.

Kasaya discloses a valve unit with a switch having an electrically conductive valve which slidably moves within a guide hole defined in an electrically conductive body. A ceramic layer is formed on the peripheral surface of the valve for maintaining an electrically insulated state between the valve and the body. The layer is formed by a physical evaporation method such as an ion-plating method and provides electrical resistance progressively from the inner surface closest to the valve to the outer surface destined to make contact with the wall of the guide hole (col. 1 line 58 to col. 2, line 6). The valve is made of steel (col. 3, line 9).

As is plainly shown in Figs. 1-3, the ceramic sleeve and ceramic piston are solid parts, and as claimed are made of a ceramic material. Kasaya only discloses coating a part of a steel part because of electrical connectivity that is required. Such a disclosure does not suggest or lead one skilled in the art to use a solid ceramic part.

Further, while the present invention seeks to avoid using a steel sleeve or piston to avoid leakage, applying Kasaya as the Examiner has actually teaches away from the present invention because it suggests using steel parts, which Applicants discovered should be avoided due to leakage issues.

The Examiner disputes this distinction citing that there is no disclosure regarding the details of tolerances and leakage. However, as one skilled in the art will readily recognize, when mixed materials are used, for example steel and ceramic as in Kasaya, the different thermal expansion properties of materials will inevitably lead to widened tolerances and increased leakage. Applicants recognized such problems and solved them by using an all ceramic solid sleeve and piston. Therefore, Kasaya would not motivate one skilled in the art to use solid ceramic parts.

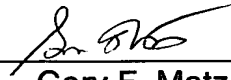
There is no disclosure in any of Kahl, GB 997,974, or Kalsi to use solid ceramic parts or to modify Kasaya to suggest that a solid ceramic sleeve and piston should be used. The Examiner's four references, taken as a whole fail to disclose, suggest or in any way motivate a skilled artisan to use a disperser with a solid ceramic sleeve and piston as is presently claimed.

For all of the reasons stated above, Claims 6-9 are not obvious over the combined prior art cited by the Examiner. Therefore, the rejection of Claims 6-9 under 35 U.S.C. § 103(a) should be withdrawn.

Conclusion

In view of the amendments and remarks, Applicants assert that the claims are now in form for allowance. Therefore, allowance of Claims 6-9 are respectfully requested.

Respectfully submitted,

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